REPORT RESUMES

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A COMPARATIVE STUDY OF THE SPEECH RESPONSES AND SOCIAL AGES OF TWO SELECTED GROUPS OF EDUCABLE MENTAL RETARDATES.
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THE RELATIONSHIP OF EDUCABLE MENTAL RETARDATES IN REGULAR CLASSES AND SPECIAL CLASSES WITH RESPECT TO VOCABULARY WAS STUDIED. THERE WERE 49 SUBJECTS TAKEN FROM REGULAR CLASSES AND 45 FROM SPECIAL CLASSES. THE PRIMARY AND ELEMENTARY FORMS OF THE WORD MEANING SECTION OF THE STANFORD ACHIEVEMENT TESTS WERE ADMINISTERED TO EACH SUBJECT BY FOUR PERSONS ENGAGED IN THIS PROJECT. TESTS WERE READ TO EACH SUBJECT SEPARATELY. BOTH FORMS OF THE STANFORD ACHIEVEMENT TESTS WERE GIVEN TO ASCERTAIN THE RECOGNITION VOCABULARY OF SUBJECTS USED IN THIS STUDY. WITH THESE TESTS, EACH SUBJECT'S VOCABULARY WAS TESTED WITH RESPECT TO THE WORDS THAT HE COULD CORRECTLY RECOGNIZE WHEN HE HEARD THEM. CORRELATION COEFFICIENTS WERE COMPUTED TO DETERMINE THE RELATIONSHIP BETWEEN MENTAL AGE AND RECOGNITION VOCABULARY AND FUNCTIONAL VOCABULARY FOR EACH GROUP, AND BETWEEN SOCIAL AGE AND RECOGNITION VOCABULARY AND FUNCTIONAL VOCABULARY FOR EACH GROUP. ADDITIONAL EXPERIMENTAL STUDIES ARE NEEDED TO DETERMINE THE RELATIONSHIP BETWEEN EDUCABLE MENTAL RETARDATES IN REGULAR AND SPECIAL CLASSES WITH RESPECT TO SOCIAL DEVELOPMENT AND SPEAKING VOCABULARY. ALSO A COMPARATIVE STUDY OF VERBAL OUTPUT AND SOCIAL DEVELOPMENT SHOULD BE MADE OF FAMILIAL EDUCABLE MENTAL RETARDATES AND NONFAMILIAL EDUCABLE MENTAL RETARDATES. (JL)

513

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A COMPARATIVE STUDY OF THE SPEECH RESPONSES AND SOCIAL AGES OF TWO SELECTED GROUPS OF EDUCABLE MENTAL RETARDATES

223

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215

TABLE OF CONTENTS

Chapter Page

I Introduction 1

Statement of the Problem 2
Justification 2
Definition of Terms 7

II. Review of Related Research 9

III. Design of the Study 23

Questions Asked 23
Hypothesis Tested 24
Procedures for Collecting Data 25
Tests Used 26
Procedures for Analyzing Data 28
Population Studied 29

IV. Results and Conclusions 35

V. Discussion and Summary 81

Bibliography 87

Appendices 90

List of Tables

Table		Page
1.	C.A., I.Q., M.A., and Name of School of Subjects in the Regular Classes	30
2.	C.A., I.Q., M.A. and Name of School of the Subjects in the Special Classes	32
3.	Social Ages and Scores Obtained on Each Test for All Subjects Enrolled in Regular Classes	35
4.	Social Ages and Scores Obtained on Each Test for All Subjects Enrolled in Special Classes	39
5	Significance of Differences in Variation and Mean Mental Ages and Social Ages Between Educable Mentally Retarded Children in Regular Classes and Special Classes	42
6	Mean Scores (unadjusted) for Regular and Special Classes on Eight Different Measurements	44
7	Relationships Between Mental Age and Word Recognition Number of Words and Number of Different Words Used	46
8	Relationships Between Social Age and Word Recognition, Number of Different Words Used	48
9	Analysis of Variance and Co-variance of Standford-Achievement Test (Primary) Scores with Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes	51
10	Analysis of Variance and Co-variance of Standford-Achievement Test (Elementary) Scores with Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes	53
11	Analysis of Variance and Co-variance of Dolch Basic Sight Vocabulary (Part I) with Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes	55
12	Analysis of Variance and Co-variance of Dolch Basic Sight Vocabulary (Part II) with Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes	57

Table Page

13 Analysis of Variance and Co-variance of Number of Words with Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes ------------------- 59

14 Analysis of Variance and Co-variance of Number of Different Words with both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes ------------------- 61

15 Number of words Used by Subjects in Regular Classes, According to Parts of Speech -------------------------- 62

16 Number of Words Used by Subjects in Special Classes, According to Parts of Speech -------------------------- 65

17 Grammatical Construction of Speech Responses for Subjects Enrolled in Regular Classes ----------------- 70

18 Grammatical Construction of Speech Responses for Subjects Enrolled in Special Classes ----------------- 74

LIST OF FIGURES

Figure Page

1 Comparison of the Arithmetic Means for Both Groups, According to Parts of Speech ------------ 68

2 Comparison of the Arithmetic Means for Both Groups, According to Grammatical Construction -- 77

3 Comparison of the Arithmetic Means for Both Groups, According to Responses to Five Pictures ------------------------------------ 79

CHAPTER I

INTRODUCTION

In a democracy, the education of all the youth is a generally recognized principle. This includes, of course, the normal children as well as those who present special problems. The problems incidental to the education of mentally retarded children are increasingly claiming the attention of educators.

Education for mentally retarded children is not different in its aim from education for any group of children. This aim is to teach the individual how to live better; to teach him to use all of his capacities; to teach him to become a useful and a contented member of the social group whether he is in a day school or in a residential school, the general purpose is the same.

If education is to meet the needs of the pupils, if the pupils are to grow as people, as citizens, as effective personalities, they must be provided with practical experiences in order that they may develop social efficiency.

The need for considering multiple factors related to growth and development becomes especially urgent for the educator when the child is viewed as an organism developing in many different ways. Some aspects of growth in this consideration include the physical, mental, educational, and social; all of which are the result of the interaction of the pupil's constitutional predisposition and environmental impacts.

As a result of this newer concept of the human organism and its development, studies are being given to the relationship among the various aspects of child development, particularly that of social development and competence as they relate to mental development. (3)

Since speech is basic for personality growth, social development, as well as effective communication, an increased emphasis is presently being placed on language development.

Schramn states:

> Communication whether between human beings, between machines, or between machines and human beings is an integral part of our lives. Human communication is a --- perhaps the -- fundamental social process. It is the glue that holds society together; the homeostatic fluid that flows among the dynamic organs of society, keeping them in balance. It makes it possible for men to live in groups. (30)

STATEMENT OF THE PROBLEM

The problem in this investigation was to compare the number of words, the number of different words, the classification of these words according to parts of speech, and the social ages of a selected group of educable mentally retarded children in regular classes in public schools with those of a similar group in special classes in public schools of Louisiana.

JUSTIFICATION OF THE PROBLEM

Social competence is not innate. It develops only as the individual encounters problems that make his present behavior inadequate. Beginning with the events of the first year of life, it develops rapidly during adolescence. The family, community, gang, church, school, and club are social groups that depend on the cooperative behavior of their members. Each member matures in social competence as the result of his or her particular adjustment to the group. (31)

A rating of social competence and a rating of intelligence do not indicate the measures of the same factors. Intellectual capacity indicates constitutional aptitude, while social competence is the extent to which the child has acquired a socially important pattern of behavior for looking after self and for participating in those activities which lead to ultimate independence as adults:

Doll states:

> Social competence may be thought of as being a functional composite human traits which subserves social usefulness as reflected in self-efficiency and in service to others. This concept postulates at all points a relation between constitutional aptitude and environmental activity and assumes that deviation or variation from the normal in these respects, whether arising from physical, mental or social causes, is ultimately mirrored in some measurable increase, decrease, or other modification of social competence. (8)

Many mentally retarded children are deficient in speech, and even more so in language abilities. This is partly because of low intelligence, and partly the result of poor environment.

According to Christine Ingram language development for educable mentally retardates is still 25 to 50 per cent or more below the standards for average children. (19)

Edna Furness states:

> There are two different kinds of vocabulary; (1) the recognition vocabulary, which is made up of the words that one recognizes and understand when he reads them or when he hears them spoken; (2) the functional which includes words a person can recall and which he uses when he himself speaks. The recognition vocabulary is about three times as large as the functional vocabulary. (15)

It has been stated that it is educationally unsound to "segregate" mentally handicapped children into special classes. All educable children according to this view should be in the regular classes. Few, however, object to "grades" as a form of segregation. Yet numerous educators object to placing children according to abilities in grades. (22)

A teacher of the regular grades does not usually understand the differential curriculum or the characteristics of the children; nor can she organize her regular grades to take care of the one or two mentally handicapped children who have been placed in her class. It is easy to assert that classes should adapt instructions to all individual differences, but this is, indeed, difficult to accomplish when classes, especially in the elementary and junior high schools, have many emergency teachers with thirty to forty children or more.

According to Sarason (7), the mentally retarded child was the "forgotten child" in American society prior to World War II. Since World War II, there has been much concern for the welfare and education of the educable mentally retarded child in the United States. By 1955, thirty-two state legislatures throughout the United States have made special provision for the recognition and education of mentally retarded children, and many communities in states not having such laws are carrying out well-organized special education programs. (36)

It is generally agreed that educable mentally retarded children are unable to profit adequately from the program of the regular elementary school. (7) However, where can the educational needs of these children be met? Can mentally handicapped children be best served in a public school, a special class, a special school, or a residential school? This problem has been argued for many years, yet there is little evidence to support the belief that they can be served better in one than in another.

According to Sarason:

> It is true that many institutions were built for the care of the subnormal. In many instances these institutions were built not because they reflected a new idea or approach or reflected an attempt to cope with this many-sided problem, but because there were either no facilities in the community or because some well-intentioned but misguided individuals believed that, all such children should be in institutions. (7)

Institutions were once considered the best means of treatment for large numbers of the educable mentally retarded children with physical defects and social inadequacies. (23) However, within the last few years, parent groups have become active on behalf of mentally handicapped children, and these parents, along with certain welfare agencies and other local organizations have established private day schools for their children. Many of the private day schools have been established for mentally retarded children primarily because of the crowded conditions in residential schools; inadequate facilities in public schools, and a strong desire of parents to keep their children at home.

Teachers who have been working with children who have made poor scores on intelligence tests and have poor academic records in school know that many of these children have been able to maintain themselves and sometimes their families in a creditable fashion after they have left school and gone to work. Educators have come to believe in the ability of these children to get along in society provided an opportunity is given in accordance with their ability.

The special schools have recognized the social maturity of children with low mental maturity, and at best have provided opportunity for them to learn the things they need to know for successful living. One of the important things in helping individuals is to see to it that they, the children, who are socially mature, but mentally immature secure an adequate education whether it be in an institution, private day school, or in a public school.

Tests of verbal intelligence and scholastic achievement have been used as criteria for the classification of grade school children for academic instruction. However, since modern education emphasizes the preparation of the child for daily living and organizing subject matter in terms of interests, needs, and activities, it is becoming desirable to include in the classification criteria measures for social growth and language development.

Regardless of where these children are located -- public, residential, or private day school, it is important that they develop those social and oral communicative skills that will permit them to make the best adjustment possible. Recognizing the value and need of considering the place where such skills can best be acquired it was felt that a study comparing children who are educable mental retardates in regular classes and those in special classes in public schools in Louisiana with respect to social development and oral communicative skills might be of value to educators and parents of mental retardates.

Authorities agree that the environment sets the beginning patterns for an individual's language growth. According to McCarthy, the more that teachers can learn about an individual's home environment, the better insight they will have into the pupil's language potentialities and limitations. (27)

Since communication plays a vital part in one's success in present-day society, it becomes of paramount importance that one be able to communicate adequately with other people. Therefore it appears to be a need for research to secure information concerning the verbal output of educable mental retardates. If the mentally retarded child, as well as the normal child, is to be educated to prepare for living then greater emphasis should be directed in this channel.

The importance of this study lies in the attempt to discover the differences in social development, certain speech responses, and recognition vocabulary between two selected groups of educable mentally retarded children; one group in special classes and one group in regular classes in public schools in Louisiana. Findings of this study may give educators and parents of the mentally retarded children some clues regarding the social development and verbal output (number of words and number of different words) of a group of regular class educable mentally retarded children and a similar group of special class educable mentally retarded children.

LIMITATION OF STUDY

This study was limited to 49 educable mentally retarded children in regular classes and 45 educable mentally retarded children in special classes in Public Schools in Louisiana. The chronological age range for all subjects was seven to fourteen years of age; the intelligence quotient range was from 50 - 75.

DEFINITION OF TERMS

1. Educable Mentally Retarded: This term will be used in this study to refer to children who have a Stanford Binet I. Q. within the range of 50-74.
2. Recognition Vocabulary: This term will be used in this study to refer to the scores obtained by subjects on the Stanford Achievement Word Meaning Tests, elementary and primary forms; and also scores obtained on the Dolch Basic Sight Vocabulary, Parts 1 and 2.
3. Speech Responses, verbal output, and functional vocabulary: These terms will be used interchangeably throughout this study to refer to the number of words and number of different words used by subjects according to five structured speaking stimuli.
4. Periodic Sentence: This term will be used to refer to a long, involved sentence, having several phrases or clauses that rises to a sort of climax, leaving the reader in suspense until the end.
5. Loose Sentence: This term will be used to refer to a long, involved sentence, having several phrases or clauses. This sentence may be terminated at several places before the end without singularly changing the meaning of the sentence.
6. Balanced Sentence: This term will be used to refer to a sentence with several clauses, or several words, or several phrases, each of them respectively set apart usually by a conjunction with parallel structure on both sides of the

conjunctions.

7. Fragmentary Sentence: This term will be used to refer to a sentence that does not make a complete thought.
8. Inversion Sentence: This term will be used to refer to a sentence in which the predicate comes before the subject.
9. Average Length Sentence: This term will refer to a sentence that consists of 4 words to 6 words.
10. Short Length Sentence: This term will refer to a sentence that consists of 4 words or less.
11. Long Length Sentence: This term will refer to a sentence that consists of 8 or more words.

CHAPTER II

REVIEW OF RELATED RESEARCH

Since the publication of the Vineland Social Maturity Scale in 1935 numerous studies have been devoted to determining the relationship between measures of social competence and measures of intelligence and/ or personality. Writers have been concerned with both deviates and normals, as well as racial and sex differences. The research literature devoted to the scale was found to be too voluminous for a complete coverage; therefore, the more worthwhile contributions pertaining to certain aspects of this problem were selected for review.

There appeared to be some degree of unanimity among the various writers concerning the influence of cultural factors on social maturity.

In 1937 Anderson (1) reported a study of the use of the Vineland Social Maturity Scale in the special education classes of different schools at Newark, New Jersey. Two hundred fifty junior high school boys and girls from the Montgomery Binet School (a special school for retarded children) and 185 boys in two junior high schools of Newark, New Jersey were matched for chronological age and grade placement and given the Vineland Social Maturity Scale and Stanford Binet Test. The writer concluded that the social objectives of education should not be subordinated to the scholastic objectives, particularly in the case of intellectually handicapped pupils of favorable social competence.

Doll and McKay (11) conducted a similar study in 1937 in which they used 38 children at Vineland Training School, Vineland, New Jersey. These children were matched for life age, intelligence quotient, and sex with 38 children from special classes for the retarded. The purpose of their study was to investigate these children with respect to social competence as contrasted to Binet Intelligence, and determine if it were possible to distinguish between the feebleminded and the dull normal. It was suggested that when both Social Quotient (S. Q.) and Intelligence Quotient (I. Q.) are below 70 the individual may be feebleminded; when both S. Q. and I. Q. are above 80 the individual may be normal even though dull-normal; and when either S. Q. or I. Q. is below 80 the individual may be borderline.

The possibility of using the Vineland Social Maturity Scale as an instrument for educational classification in regular schools was explored soon after its publication. Bradway (4) reported a statistical analysis of the results obtained from 310 regular and special class students (grades 4-8) at Anne J. Kellog School, Battle Creek, Michigan. All subjects were administered the Vineland Social Maturity Scale, the Revised Stanford Binet and the Pintner Portrait Test. Pupils were grouped as gifted, non-conformity, remedial, retarded and open air classes for analysis or results. The author concluded that the scale showed possibility of being used in educational classes. The high relationship between social maturity and intelligence seems to indicate that only one measure was necessary. She also stated that the value of the scale in the study of problem children might be emphasized.

The prognostic value of the scale was indicated by Doll (10) in 1939 when he attempted to determine the feasibility of post-institutional means for releasing patients from the Vineland Training School. One hundred two adult patients were given the scale in their foster homes with the foster parents acting as informants. Intelligence test scores were obtained from the record. The writer concluded that post-institutional boarding home care was desirable and practical as part of social supervision of feebleminded. The patients were found to be useful and not exploited.

Doll and Fitch (9) examined 91 whites and Negro juvenile delinquent boys at the State Home for Boys, Jamesburg, New Jersey, to test the practicability of the method with delinquents in an institutional environment, where disciplinary control might be expected to influence the expression of social competence. Aside from its research implications the study confirms the practicability of the method with subjects whose expression of social competence is handicapped both by untrustworthiness and by environmental regimentation. The study indicated the feasibility of employing the method in the face of such obstacles.

Thorndike (33) used 50 gifted boys and girls as Speyer School, P. S. 500, New York City, to make a comparative study of abstract intelligence and developmental age. The Furfey test was given to the girls and the Sullivan adaptation of the same test was given to the boys. The investigator concluded that maturity varied widely from item to item on the test. For some items, maturity seemed not to be related to mental ability. Maturity seemed to be much greater on certain sub-tests. As compared with other children not selected for intelligence, certain appeals seemed to be relatively more effective with these children than with others.

Watts (36) reported a study comparing delinquent and non-delinquent Negro boys with age and I. Q. held constant. He used 92 delinquents in the Industrial Home for Colored Children in the District of Columbia and 91 non-delinquent boys selected from the same schools attended by the delinquents before commitment by the court. Subjects were given the Otis Self-administering Test, the Woodworth-Mathews Personal Index Sheet, and the Vineland Social Maturity Scale. The author concluded that there were no significant differences in tendency toward problem behavior, social maturity, and emotional stability when intelligence and age were held constant. The investigation indicated the impossibility of such difference which would detect those who were more likely to become delinquents.

Capwell (5) conducted an investigation in which she attempted to study personality differences of delinquent and non-delinquent girls. She used 108 girls at the Minnesota State School for Girls and 85 non-delinquent girls in the public school of

Sauk Center, Minnesota. For personality measures she used the Minnesota Multiphasic Personality Inventory, Washburn-Social Adjustment Inventory, the Pressy Interest-Attitude Test, the Vineland Social Maturity Scale, and the Terman-Mile Tests of Masculinity-Feminity. For intelligence she used the Kuhlman Test of Mental Development and for achievement the Stanford Achievement Test. The writer concluded that the Minnesota and Washburn discriminate the delinquents from the non-delinquents in degree of personal adjustment. The Vineland showed differences which were more closely related to interest than delinquency. The Pressy and Terman did not discriminate. Therefore, personality tests may be of some value in describing the personality pattern of delinquents as distinguished from non-delinquent girls.

The use of the Vineland Scale has not been restricted to America. Bodman, (2) in 1946, investigated its usefulness as a tool of social medicine in England. Subjects consisted of 36 cases taken from the Bristol Child Guidance Clinic. Both rural and urban children were used from all economic levels of society. Subjects were given the Vineland Social Maturity Scale and the Terman Merrill Intelligence test. The writer suggests further research on the usefulness of the scale and comparable studies should be made.

Another study conducted in England was that of Rudolf (29) in 1949 at Hortham Colony. He used 262 defectives of both sexes between the ages 10 and 50 compared changes in intelligence and social maturity while undergoing treatment. The Wechsler Bellevue and Social Maturity Scales were administered and repeated from six to 18 months later. The investigation revealed that the raises in I. Q. and S. Q. were similar and may be regarded identical. The vocabulary test showed more rise than fall.

Rain (28) conducted a study in 1952 in which an attempt was made to find out if there were a difference in the rate of maturation of social competence between children who may be classified as familials and non-familials. The study was limited to 62 defective children. Familials and non-familials were matched for C. A. and M. A. before the Vineland was administered. Results showed that the non-familials were lower than the familials in social age and social quotient.

A study closely related to Rain's was conducted in the same setting by Cassell and Riggs (6) one year later further exploring the relation between etiology and social competence. Sixty male subjects were classified as organic, familials and "unexplained". Results from the social scale were analyzed on basis of successive levels of generality: total social age, social age for each subtest, and success versus failure on the scale. The Vineland scale proved to be a useful exploratory technique for differentiating etiological groups. Familial subjects were relatively competent in all areas; while organics were relatively incompetent in all areas.

Kalin (21) used 45 male students at Rutger University to explore the possibility that social intelligence may play a role in responses to Rosensweig Picture Frustration Study. The Otis Test of Mental Ability, Rosensweig P. F. Study and The Social Intelligence Test were administered at two weeks intervals. The writer concluded that the way Picture Frustration test situations are perceived may be partly conditioned responses made to the test. Findings also suggest that certain ability factors were related to types of responses on the Picture Frustration Study.

Mitchell (25) was interested in investigating the feasibility of using the Vineland as a screening device at Caswell Training School, Kingston, North Carolina. She used for her study 52 high grade feebleminded girls who had been placed in the institution on the basis of other measures. Findings indicated that the girls were more competent socially than intellectually. She concluded that the social competent but mentally incompetent child should be placed in some situation other than an institution for mentally retarded.

Another aspect of this investigation was to ascertain the speech responses, according to five structured speaking stimuli, of two selected groups of educable mental retardates.

A review of literature pertaining to language development of children reveals that considerable research studies have been made regarding the oral communicative skills of children. Also, numerous studies have been made in the area of language development, but most of these studies do not deal with the functional vocabulary of neither normal nor retarded children; basic emphasis has been placed on the recognition vocabulary and reading. However, few studies have dealt with determining the number of words and number of different words used by mentally retarded children. There are studies in which the investigators have considered the factor of environment as a vital variable influencing an individual's vocabulary. One such study attempted to secure an estimate of the speech content of a group of institutionalized pre-school children and a group of non-institutionalized pre-school children.

Jean Moore (26) attempted to study the influence of the environment on children's speech, to analyze the number and kinds of topics about which the child talked spontaneously, and to discover what experiences and materials were mentioned in his conversation.

A statistical study of responses of 51 pre-school children of whom eleven were orphans and forty non-orphan children. The groups were not equated for chronological age or intelligence; those children of the orphanage had a very meager background and were from the lower economic-social levels.

The Simth-Williams Vocabulary test was used, and fifteen 2-minute responses from each child were obtained. One-half of these responses were obtained during outdoor play and the rest from indoor play. The reliability of the speech samples was checked by the investigator and a trained observer.

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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Cooperative Research Branch

Project Description

Title: A Comparative Study of the Speech Responses and Social Ages of Two Selected Groups of Educable Mental Retardates (USOE/513)

Investigator: Mamie Louise Thompson Wilson, Associate Professor

Institution: Grambling College, Grambling, Louisiana

Starting Date: February 1959

Closing Date: January 1960

PROBLEM

This study investigates the speech responses and social quotients of educable mental retardates in regular and special classes in public schools.

MAJOR OBJECTIVES

The objectives are (1) to compare the number of words, the number of different words, the classification of these words in terms of parts of speech, and the social quotients of mentally retarded children in regular and special classes; and (2) to provide data on the relative social development and verbal out put of mentally retarded children in regular and special classes.

PROCEDURES AND DESIGN

Fifty educable mental retardates, in the age range from 7 to 14, who are attending regular classes in the public schools will be compared with a similar sample in special classes. Selected pictures will be used to elicit speech responses for analysis, and each subject will be given an intelligence and a social maturity test. Subjects in regular and special classes will be compared on the basis of social and mental ages, number of words and total number of words used, and functional and recognition vocabularies.

Findings of this study indicate that the sum of the actual variety speech content scores of the orphanage group was not statistically significant for that of the non-orphanage group. Also, the speech content referring to the pre-school environment was not statistically significant. In addition, the speech content referring to the environment outside of the pre-school environment had no statistical significance for the factor of environment.

The orphanage children used nouns concerned with the parts of the body, play material, activity routine, and the building furnishings; while the non-orphanage group used nouns of activities of other children, themselves, adults, clothing and nature. Falk (14) did a historical study to find out the relationship of vocabulary growth to factors over which teachers have control. An analysis of nineteen articles and summaries of research in the area of vocabulary readiness was used for this study.

Findings of this study indicate that many studies state that the first grade child has a vocabulary of 2,500 words; however, Seashore's study estimates that the average first grade child has a vocabulary of 17000 basic words with an additional 7000 derivatives. He thinks that the bright child may have a vocabulary up to 40,000 words. The studies in the area of vocabulary of children do not indicate words that children may use in other situations besides the ones used in the study. Word count does not reveal the quality of words used by the child nor the exactness with which they are used.

Seashore deplores the gap between the children's vocabularies and the stereotyped contents of reading primers and pre-primers. He feels that the vocabulary content of beginning readers could be materially improved.

Falk lists some implications for teachers on the size of vocabularies, namely: (a) estimates of the size of vocabularies reveal little about the number of words known by individual children in each class; (b) pupil variations in one class alone may be very great; (c) no study can reveal the potential vocabulary of a child in a stimulating environment.

Fisher found the consideration of vocabulary to be only one aspect of the child's language experience. Where home experiences were meager, many children had inadequate concepts and an inability of adequate expression.

Watts found speaking centers first around disputes, and that arguments are a natural sequence of language.

Piaget found only sixty-one per cent of what he called "social speech" used by the children he observed.

Mabie found cooperative activities more conducive to communication than were competitive activities.

Falk concluded by stating that the most significant factor in the increase of the child's vocabulary is intelligence. Girls' vocabularies develop more rapidly than boys'. Richer home environment increases vocabularies. Children's knowledges and vocabularies grow at approximately the same rate.

Hilliard and Troxell (18) made an attempt to investigate the bearing of a rich information background on the reading readiness and the reading progress.

This was a statistical study, where seventy children were studied from kindergarten to Grade 2. Two groups of children, one with rich information background and one with meager background, were selected through teacher judgment, informational questionnaire of the home, and home visits. Further shifting of the children was done through the results of the Sangren Information Test for Young Children, the Smith Vocabulary Test, the Healy Pictorial Completion Test, and the Lee-Clark Reading Readiness Test were used in this research. After the groups were selected, the Gates Primary Reading Test was given in the sixth month of the first grade, and again in the fourth month of the 2nd grade.

Findings indicate that the skills were widely distributed on the reading readiness test. Five of the rich background and nineteen of the meager background group were below a raw score of 23 on the reading readiness test. Lee-Clark states that scores below 23 are likely to fail in reading progress. At the time of the first testing in the first grade the group with rich background averaged 2 months ahead of the meager group and 2 months ahead of the grade standard for the time of testing. At the time of the second testing, the group with the rich background had an average that was 6 months above the average of the meager group and 5 months ahead of the standard for the time of testing.

The meager group was one month below standard on the second test. The rich background group evidenced superiority in the abilities to comprehend sentences and paragraphs.

The writer concluded that if a careful study is made of children in the kindergarten, a better classification can be made in Grade one before reading activity is begun.

Also, other factors being equal, this study shows that children with rich backgrounds are more strongly equipped to attack the printed page than are pupils of meager backgrounds because of enriched meanings and thought which the former bring to this task.

Lewis (24) made an attempt to ascertain the difference between the groups (mentally gifted and retarded children) in relative achievement, that is whether retardation or acceleration in achievement relative to ability.

This study was limited to 4, 528 gifted children from upper ten per cent of each grade, and 4, 628 retarded children from lower ten per cent of each grade.

The Kuhlman Anderson Test and Unit Scale of Attainment Tests were used to measure the reading ability.

Results indicate that the mental age and length of learning period are only the important factors in achievement. The most powerful form of motivation is the experience. The home conditions of the gifted child are superior to those of the mentally retarded and the relative achievement of mentally gifted and retarded children, obviously involves so many variables, whose influence can not be exactly determined.

The writer concludes that mentally retarded children are achieving well, even taking into consideration their relatively long learning period and even though they face numerous handicaps.

Anderson and Fairbanks (13) made an attempt to determine the relationship between the abilities to understand words read and words heard. This study was limited to two hundred and twenty University freshmen.

Form C of the Inglis Tests of English Vocabulary was used to measure reading vocabulary. An unselected sample of fifty items from Form B of the Inglis test was recorded phonographically and used to test hearing vocabulary.

Students were divided into three groups, namely: poor, median, and good silent readers. The conclusions by the author indicate that while superior silent reading ability is characterized by reading knowledge of words which are not ordinarily used, one attribute of poor reading is inability to recognize words visually, although the reader may understand these in hearing them.

Also, significant differences exist between any two means of the three sub-groups for both reading vocabulary and hearing vocabulary. The amount of the increase in mean vocabulary scores is constant, being more so for the reading than the hearing vocabulary. Poor readers scored higher in the hearing than in the reading vocabulary test. On the other hand, the group means for the median and superior readers were highest for the reading vocabulary.

The author stated that the correlation between hearing vocabulary and reading ability is practically identical with that between vocabulary and intelligence.

Garrison did a study to find out the relationship between different vocabulary abilities. This study was limited to sixty-six third grade pupils, thirty-five girls and thirty boys. Students were divided into two groups, in the following manner: One group consisted of thrity-five girls and the other group consisted of thirty-five boys. These subjects were presented three tests: rhyming test, vocabulary test, and word building test. (16)

Findings of this study indicate that there is a positive relationship between the three vocabularies tested, the highest being the rhyming and the vocabulary test scores. The subjects showed an unusual amount of variability on the rhyming test with the least amount on the vocabulary test. There is no reliable sex difference found for the three vocabulary abilities.

Gregory (17) did a study to determine the minimum reading vocabularies of third-grade children. This study was limited to the first three grades in the University of Oregon. The prescribed textbooks used were: Beacon Primer, Natural Primer, Beacon First, Natural First, Natural Second, National Third, Hamilton's Essential of Arithmetic, The New World Speller-Reading Vocabulary, the New World Speller--Spelling Vocabulary. Every word in each book was counted and listed with the number of times it was used in the book.

The findings from this study indicate that there is a high correlation between the words used in readers and those found in the speller and arithmetic. The frequency with which the various words occur should be valuable factors in determining what ought to be expected of children in these grades.

Triggs (34) did a study to determine the relationship between specific reading skills and two aspects of intelligence: verbal and non-verbal. This study was limited to thrity-six students (18 girls and 18 boys) in grades seven through twelve, forty students (23 girls and 17 boys) in grades four through six. Two tests were given to all students: the Wechsler Bellevue Intelligence Scale and the Diagnostic Reading Tests: Survey Section.

Findings reveal that the reading skills of children in grades four through six are less closely related to verbal ability than are the skills of the junior, senior high school students. The reading skills measured in this study are more closely related to verbal than to non-verbal ability. Although the relationship of all reading skills to non-verbal ability is lower than to verbal ability, there is a positive correlation.

Thomas did a study to secure evidence either to refute or to support the criticisms that our elementary schools had failed to teach reading adequately enough to assure each pupil a reasonable amount of success in the junior and senior high schools. (32)

This study was made in the public schools of Hartfort, Connecticut in the years of 1943-1944 and part of 1945. Scores of approximately three thousand sixth grade pupils were used before their promotion into the junior high schools.

The author concluded that only 13.4% of the two thousand nine hundred and eighteen pupils were reading at a level more than a year below their normal expectancy; thus, it was felt that the amount of pupil failures in the elementary schools could not be called excessive.

Edmiston (12) did a study to determine the relationship between the achievement of groups and ranges of ability within the groups.

This study was limited to fifth and sixth grade pupils of the elementary schools in Hamilton, Ohio. Those selected for the study were sixteen class groups with a total of 462 pupils. The same teacher taught reading in the two fifth and two sixth grades of each school. The groups were predicated on the results of the Henmon-Nelson Intelligence Test.

Findings indicate with the elimination of slow learners and with the measures the teachers used, the results indicated better reading achievements in groups with an average range of intelligence quotients of forty points than in groups with an average range of thirty points.

Although investigators have studied the vocabulary of orphans and non-orphans, of specific school subjects, and many vocabulary studies have been done relative to environmental conditions, no research directly related to homogenous grouping, as they concern the speech of the mentally retarded could be located. However, Christine Ingram does report that the mentally retarded child who is 13, 14, 15, or 16 years of age is still far below expectation in language expression for the average child. The majority of these retardates have probably not acquired more than 7,000 to 9,000 words, contrasting with about 15,000 or more for average children of the same age. (19)

It is evident that one of the characteristics of the subnormal is his language limitation. According to Sarason (8), the language restriction of the subnormal is due to the extent of his vocabulary and inability to comprehend and therefore to use correctly, words that the normal child understands easily.

Voluminous research has been done to determine the relationship between measures of social competence and measures of intelligence. Writers have been concerned with both the deviates and the normals. Research studies that are most pertinent to this aspect of the problem are reported. The present study also considers certain aspects of oral communicative skills in educable mentally retarded children in a regular class and those in special classes. But, research in this area could not be located. Reported here are studies that considered some specific factors that are somewhat allied with this study.

The following conclusions are based on the research studies presented:

1. Environment and background experiences seem to be positively related to

the size of vocabulary.

2. Superiority of some school children in vocabulary may be the result of the school's curriculum.

3. Most studies reviewed indicated a high relationship between social maturity as measured by the Vineland Social Maturity Scale and Intelligence.

4. Social objectives of education should not be subordinated to the scholastic objectives, particularly in the case of intellectually handicapped pupils of favorable social competence.

CHAPTER III

DESIGN OF THE STUDY

This research attempts to answer the following questions which are importantly related to the problem of this study:

1. What is the relationship between the mental ages and recognition vocabulary, as determined by scores obtained on each of the four vocabulary tests used in this study, for educable mental retardates in regular classes ?
2. What is the relationship between the mental ages and recognition vocabulary, as determined by scores obtained on each of the four vocabulary tests used in this study, for educable mental retardates in special classes ?
3. What is the relationship between the mental ages and functional vocabulary, as determined by the number of words and number of different words used according to five structured speaking stimuli, for educable mental retardates in regular classes ?
4. What is the relationship between the mental ages and functional vocabularay, as determined by the number of words and number of different words used according to five structured speaking stimuli, for educable mental retardates in special classes ?
5. What is the relationship between the social ages and recognition vocabulary, as determined by scores obtained on each of the four vocabulary tests used in this study, for educable mental retardates in regular classes ?
6. What is the relationship between the social ages and recognition vocabulary, as determined by scores obtained on each of the four vocabulary tests used in this study, for educable mental retardates in special classes ?
7. What is the relationship between the social ages and functional vocabulary, as determined by the number of words and number of different words

used according to five structured speaking stimuli, for educable mental retardates in regular classes?

8. What is the relationship between the social ages and functional vocabulary, as determined by the number of words and number of different words used according to five structured speaking stimuli, for educable mental retardates in special classes?
9. What is the arithmetic mean with respect to the number of phrases, clauses, and sentences used by each group?
10. What is the arithmetic mean with respect to the number of fragmentary, periodic, balance, and length of sentences used by each group in this experiment?
11. What is the arithmetic mean for each group with respect to parts of speech used in response to five pictures?

Hypotheses Tested

Hypothesis 1. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Stanford Achievement -Primary Test.

Hypothesis 2. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Stanford Achievement -Elementary Test.

Hypothesis 3. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Dolch Basic Sight Vocabulary (Part I).

Hypothesis 4. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Dolch Sight Vocabulary (Part II).

Hypothesis 5. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to functional vocabulary as measured by the number of words used.

Hypothesis 6. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to functional vocabulary as measured by the number of different words used.

Procedures for Collecting Data

Initially, letters were sent to superintendents and/ or principals to secure permission to test at schools. A copy of the abstract of the study was sent with each letter. Different members of this research team interviewed the principals after permission was granted to test in their schools, in order to set up tentative testing dates. The principals at the various schools were informed to instruct their teachers to refer their "brightest" students in special classes to be tested; and their "dullest" students in regular classes to be tested. Each teacher was instructed to take meticulous care to exclude children who possessed observable physical and/or speech defects in special and regular classes. (See appendices for letter and abstract) These children were examined and those found to have an intelligence quotient, as measured by the Stanford Binet Scale, Form L, between 50 and 75 were selected as subjects.

Tests Used

The Stanford Binet Scale, Form L, was used because of its reliability and validity established. (Refer to appendices for a copy of Form L of the Stanford Binet Scale, Form L.)

The Vineland Social Maturity Scale was selected to determine the social ages for each subject in each group. Classroom teachers served as informants for all subjects used in this study. A scoring sheet was mimeographed and given to each teacher along with the Vineland Social Maturity Scale. (See appendices for copy of the Scoring Sheet and copy of the Vineland Social Maturity Scale.) The Vineland Social Maturity Scale was chosen for this study because of its wide use to measure the social maturity of children. (22)

The primary and elementary forms of the word meaning section of the Stanford Achievement Tests were administered to each subject by four persons engaged in this project. It was necessary for each person to aid in administering this test, as the test had to be read to each subject separately, and the testers recorded the responses of each subject to each question on both forms of this test. Both forms were given to ascertain the recognition vocabulary of subjects used in this study. In this respect each subject's vocabulary was tested with respect to the words that he could recognize the correct meaning when he heard it. Parts 1 and 2 of the Dolch Basic Sight Vocabulary were also administered by four testers. Each subject was given this test separately. Each subject was asked to point to each word he recognized and he was also asked to say the word aloud. This was done to be sure that the subject actually knew the word. The results of parts 1 and 2 of the Dolch Basic Sight Vocabulary Test were also used to ascertain the recognition vocabulary of subjects in this study. With this vocabulary test, each subject was tested with respect to his ability to recognize a word when he sees it.

Pictures Used

In order to secure the number of words and number of different words used by each subject, speech responses were elicited to five selected pictures. Each subject was allotted exactly three minutes to speak spontaneously about each picture. This time allotment was used because it was felt that the attention span of the subjects might decline after three minutes. These pictures were chosen from a group of 40 pictures that had been used with children with speech defects. The pictures selected were used with 10 retardates in a special class at Muscatatuck State School who had a chronological age range of eight to 16 years, and who possessed an I. Q. of 50 or above as revealed by the Stanford Binet Scale. The pictures were presented to these children to discover whether they would respond. As each picture did elicit response it was felt to be of value in this experiment. The pictures were pasted on assorted colors of construction paper. (These pictures have been photographed for this study and are located in the appendix.)

One picture depicted an outdoor water scene. It shows a flat-top ferry being towed by a light freighter to a not too distant dock, visible in the foreground. There is a woman doing household chores on the towed ferry as a man sits idly by. The sun is subsiding, and its reflection shows beautifully on the water. Fourteen doves can be seen flying. This picture was selected to test the subjects' verbal output about a water scene.

Another picture is the least complex of all, yet one with which most children are probably familiar. It shows a birthday cake with thick icing and five pink candles. It has a checked-decorated top of pink icing with flower-like designs around each candle. There are some beautiful red roses in the background. This picture was selected for its probable value in testing the subject's verbal output relative to a common social experience to children of this age group.

A third picture depicts a modern living room with its television set, wall pictures, books, sofa, thick carpet, and picture window with curtains. This picture was selected because it depicts the subjects' verbal output concerning home and family life experiences.

Though closely related to the third picture insofar as testing experiences in home and family life is concerned, a fourth picture was selected for its possible value in determining the subjects' verbal output concerning experiences in cooking and food preparation situations. It shows a kitchen scene in which a woman is standing before a modern cooking range baking pies and ham.

The fifth picture of this series shows an outdoor land scene. There are several small boys playing baseball on a small, neighborhood field. Several grown-ups and child spectators are in the bleachers watching, others are standing on the sidelines. Several colonial-type homes are shown in the foreground, and a brand new two-tone car stands parked practically unnoticed. This picture was selected because it dealt with outdoor sports experiences.

Procedure for Analyzing Data

For those hypotheses that studied significance of relationships, a product moment coefficient of correlation was utilized. This statistic seems appropriate when it is desired to show the significance of and degree of relationship between two variables.

In testing the significance of difference between the two groups of children, the analysis of co-variance was used. Two factors were controlled; mental age and social age. Procedures, as outlined in Johnson were followed in completing these analyses. (20)

In testing the significance of difference between means of the two groups with regard to mental age and social age, the "t" test of significance was used, after an assessment of the homogeneity of variance - assumption of the "t" test.

Tabulations were made of each subject's responses according to eight parts of speech, sentence patterns, phrases, and clauses. The arithmetic mean for each group for parts of speech, sentence patterns, phrases, and clauses were secured.

The significance of all statistical data was tested at the five per cent and one per cent confidence levels.

Population Studied

The chronological age range of all subjects was generally from 7 to 14 years of age. The range in I. Q. of all subjects was generally from 50 to 75, according to the Stanford Binet Scale, Form L results. After obtaining the I. Q. for each subject, the mental age was derived for each subject.

Table I gives the name of the school, chronological age, intelligence quotient and mental age for each subject enrolled in regular classes.

TABLE 1. C.A., I.Q., M.A., AND NAME OF SCHOOL OF THE SUBJECTS IN THE REGULAR CLASSES

Subject	C. A.	I. Q.	M. A.	School
1	10-9	74	8-0	Stoney Hill
2	7-11	64	5-1	Stoney Hill
3	9-2	79	7-3	Stoney Hill
4	11-0	50	5-6	St. Matthews
5	10	78	7-9	First Ward
6	8-8	75	6-6	Stoney Hill
7	11-4	71	8-0	Stoney Hill
8	12-2	59	7-2	J. L. Jones
9	9	71	6-5	St. Matthews
10	9-10	75	7-4	Second Ward
11	9-10	75	7-4	St. Matthews
12	7-9	67	5-2	Stoney Hill
13	9	72	6-6	St. Matthews
14	10-4	67	6-7	Lincoln
15	10	66	6-7	Lincoln
16	7-3	72	5-2	Second Ward
17	10-9	74	8-0	Stoney Hill
18	12-8	50	6-4	Stoney Hill
19	8	53	43	St. Matthews
20	11	66	7-3	Lincoln
21	8-0	70	5-7	First Ward
22	11-9	64	7-6	Lincoln
23	7-6	59	4-5	First Ward
24	11	57	6-3	Second Ward
25	7-3	78	5-8	First Ward

Subject	C. A.	I. Q.	M. A.	School
26	11	70	7-8	Lincoln
27	9	50	4-6	St. Matthews
28	11	52	5-8	Stoney Hill
29	12	73	8-9	First Ward
30	10	50	5-0	St. Matthews
31	13	70	9-1	J. L. Jones
32	15-7	64	9-5	J. L. Jones
33	8-8	63	5-5	Second Ward
34	7-4	72	5-3	First Ward
35	8	50	4-0	St. Matthews
36	9-4	75	7-0	Second Ward
37	13	54	7-0	Lincoln
38	11	54	5-11	J. L. Jones
39	9-4	75	7-0	Lincoln
40	10-2	66	6-8	Second Ward
41	13	70	9-1	Lincoln
42	13	53	6-10	Lincoln
43	8-4	70	5-10	J. L. Jones
44	11-3	78	8-9	Lincoln
45	8-7	73	6-3	Second Ward
46	7-1	74	5-3	Second Ward
47	10-2	66	6-8	Second Ward
48	9	66	5-11	J. L. Jones
49	9-7	73	7-0	First Ward

Table 2 gives the name of the school, chronological age, intelligence quotient and mental age for each subject enrolled in special classes.

TABLE 2. C.A., I.Q., M.A., AND NAME OF SCHOOL OF THE SUBJECTS IN THE SPECIAL CLASSES

Subject	C.A.	I.Q.	M.A.	School
1	14	61	8-4	Park Elementary
2	10	59	5-11	Park Elementary
3	13-2	66	8-11	Park Elementary
4	10	64	6-5	Park Elementary
5	6-10	77	5-3	Lincoln Elementary
6	8-10	76	6-9	Shady Grove
7	9	63	5-8	Lovick Jr. High
8	8	53	4-3	Lincoln Elementary
9	9-1	63	5-9	Milan
10	10	56	5-7	Shady Grove
11	11-2	49	5-5	Milan
12	10	64	6-5	Park Elementary
13	8-7	50	4-3	J. L. Jones
14	7-4	53	3-11	Lovick Jr. High
15	7-9	67	5-2	J. L. Jones Elementary
16	12	68	6-2	Park Elementary
17	9	67	6-0	Lovick Jr. High
18	8	62	5-0	Shady Grove
19	8-7	51	4-5	Park Elementary
20	11-5	70	8-0	Park Elementary
21	12	62	7-5	Lovick Jr. High
22	12-11	60	7-9	Lincoln Elementary
23	6-9	70	4-9	Park Elementary
24	10	58	5-9	Park Elementary
25	11-0	55	6-0	Lincoln Elementary

Subject	C.A.	I.Q.	M.A.	School
26	11-9	75	8-10	Park Elementary
27	9-1	50	4-6	Park Elementary
28	8-2	77	6-3	Shady Grove
29	15-6	50	6-10	Lincoln Elementary
30	9	51	4-7	Lovick Jr. High
31	8	74	5-11	J. L. Jones
32	10	52	5-2	Lincoln Elementary
33	12-11	50	6-5	Shady Grove
34	9-2	79	7-3	J. L. Jones
35	14-3	49	6-9	Park Elementary
36	11	73	8-0	Milan
37	13-1	57	7-5	Milan
38	12	62	6-3	J. L. Jones
39	12-9	50	6-4	Milan
40	13-6	53	7-0	J. L. Jones
41	9-1	60	5-5	Lincoln Elementary
42	12	64	7-8	Milan
43	10	52	5-2	Milan
44	13	70	9-1	Park Elementary
45	14	51	6-11	Shady Grove

Two groups of educable mentally retarded children were therefore identified. One group was enrolled in regular classes; a similar group was enrolled in special classes. A total of forty-five subjects were selected from special classes in this study, and forty-nine subjects were selected from regular classes.

Subjects from regular classes were selected from:

Lake Charles -- First Ward; Second Ward
Shreveport -- Stoney Hill
Minden -- J. L. Jones
Natchitoches -- Central; St. Matthews
Ruston -- Lincoln

Subjects from special classes were selected from:

Baton Rouge -- Park Elementary School
Shreveport -- Milan
Minden -- J. L. Jones
Natchitoches -- Lovick Junior High; Shady Grove
Ruston -- Lincoln

Photos were made during testing situations at the various schools. These photos give vivid descriptions of subjects used in this study. (Refer to appendices for photos.)

Also, a film was taken and edited of testing situations. This film is accompanied with this study.

After the completion of tests at the various schools, principals were sent test scores obtained by each child on each test, and a letter of thanks. (Refer to appendices for letter.)

CHAPTER IV

RESULTS AND CONCLUSIONS

A major problem of this investigation was to determine the relationship between social age and word recognition, number of words and number of different words used by educable mental retardates enrolled in regular classes and special classes.

The social ages and scores obtained on each test for all subjects enrolled in regular classes are given in Table 3.

Table 3. Social ages and scores obtained on each test for all subjects enrolled in regular classes.

Subject	S. A.	Stanford Achievement Primary	Stanford Achievement Secondary	Dolch Voc. Part I	Dolch Voc. Part II	No. of Words	No. of Different Words
1.	11-1	21	15	29	20	95	50
2.	9-3	27	17	8	0	94	51
3.	11-4	26	18	37	43	11	11
4.	12-0	28	20	27	19	89	31
5.	11-9	22	24	44	40	93	81
6.	10-3	25	21	2	0	92	39
7.	13-1	30	22	106	96	70	46
8.	13-5	28	17	32	17	38	21
9.	10-4	18	12	8	3	99	52
10.	11-4	28	23	64	51	81	53
11.	11-4	28	23	64	51	81	53
12.	9-1	15	8	3	1	54	38
13.	10-8	12	8	72	66	100	70
14.	12-2	26	25	35	64	45	43
15.	12-2	28	22	12	9	76	60

Subject	S. A.	Stanford Achieve. Primary	Stanford Achieve. Secondary	Dolch Voc. Part I	Dolch Voc. Part II	No. of Words	No. of Different Words
16.	8-9	21	12	4	18	83	56
17.	13-6	21	15	29	20	97	80
18.	12.0	15	12	10	15	92	63
19.	7.6	5	7	2	1	80	30
20.	10.9	10	4	3	4	36	32
21.	11-4	11	19	111	108	68	35
22.	13-1	8	5	3	1	49	39
23.	8-5	1	1	28	27	73	40
24.	13.7	11	24	110	105	54	53
25.	9-7	23	17	92	100	100	92
26.	12-1	3	2	18	19	37	25
27.	9-4	19	16	29	20	177	62
28.	11-8	6	4	8	8	108	78
29.	14-7	34	28	99	83	96	62
30.	11-4	11	6	1	0	25	17
31.	15-4	25	18	89	64	72	41
32.	15-9	8	9	2	2	69	45
33.	8-0	21	16	0	1	62	59
34.	10-2	15	10	6	2	106	59
35.	9-1	10	11	3	2	68	29
36.	8-1	7	3	5	2	99	80
37.	15-2	10	7	6	4	41	30
38.	11-9	14	8	7	4	52	43
39.	12-1	7	3	5	2	33	28

Subject	S. A.	Stanford Achieve. Primary	Stanford Achieve. Secondary	Dolch Voc. Part I	Dolch Voc. Part II	No. of Words	No. of Different Words
40.	9-2	18	13	50	42	103	75
41.	15-2	10	32	42	78	92	52
42.	13-8	4	3	8	10	65	46
43.	11-8	16	10	2	3	90	75
44.	14-5	18	17	7	8	44	36
45.	9-6	19	14	14	8	118	82
46.	6-9	9	4	27	24	106	70
47.	12-6	18	13	50	42	107	82
48.	12-1	8	12	39	52	83	70
49.	13-2	25	22	91	75	92	79

It can be noted from Table 3 that the highest score obtained on the word meaning section of the Stanford Achievement Test, Primary form was 34, and the lowest score obtained was 1. The range of scores obtained on the word meaning section of the Stanford Achievement Test, Elementary form was from 28 to 1. The highest score made by any subject in the regular classes on the Basic Sight Vocabulary by Dolch, Part I, was 111, and the lowest score made by any subject in this group was 0. On part 2 of the Basic Sight Vocabulary Test, the highest score obtained was 108, and the lowest score was 0. The largest number of words used in response to five pictures by subjects in this group was 180, and the lowest number used was 11. The range in the number of different words used was from 92 to 11.

Table 4 gives the social ages and scores obtained on each test of all subjects enrolled in special classes.

Table 4. Social ages and scores obtained on each test for all subjects enrolled in special classes.

Subject	S. A.	Stanford Achievement Primary	Stanford Achievement Secondary	Dolch Voc. I	Dolch Voc. II	No. of Words	No. of Different Words
1.	12-4	19	10	24	10	79	52
2.	19-9	15	10	4	1	96	50
3.	12-8	21	18	31	0	68	35
4.	13-1	19	10	21	13	52	21
5.	7-2	8	4	4	7	59	31
6.	9-4	17	8	37	38	102	61
7.	10-3	8	10	1	0	83	31
8.	9-4	6	4	9	10	27	24
9.	12-3	4	9	49	10	89	73
10.	12-9	24	14	58	65	62	29
11.	13-8	18	13	11	17	101	83
12.	9-1	13	10	30	46	115	86
13.	9-5	4	2	2	2	36	28
14.	8-0	21	14	6	8	54	30
15.	9-1	15	8	3	1	54	38
16.	13-5	16	12	2	1	56	40
17.	11-1	28	20	69	54	24	21
18.	9-3	13	12	1	0	100	31
19.	8-0	23	17	0	2	64	40
20.	11-9	16	15	94	35	103	76
21.	11-8	10	4	3	0	98	67
22.	13-1	27	24	112	108	91	72

Subject	S. A.	Stanford Achievement Primary	Stanford Achievement Secondary	Dolch Voc. I	Dolch Cov. II	No. of Words	No. of Different Words
23.	8-0	18	13	90	47	78	42
24.	11-0	13	8	14	12	59	28
25.	13	4	3	4	3	34	22
26.	14-2	24	20	68	74	115	86
27.	9-2	12	9	2	0	46	31
28.	10-4	4	2	3	4	59	26
29.	11-5	13	4	3	1	57	30
30.	9-4	23	17	0	2	31	31
31.	9-6	2	1	0	4	97	80
32.	11-1	6	4	7	7	28	24
33.	14-3	20	14	57	75	87	40
34.	10-7	12	9	2	6	102	76
35.	13-6	23	12	4	6	47	42
36.	12-9	25	10	109	108	97	88
37.	13-7	16	17	109	101	81	51
38.	13-1	23	13	35	27	55	22
39.	8-2	5	17	3	8	99	80
40.	14-8	19	16	15	19	68	35
41.	9-9	11	9	37	48	57	41
42.	13-9	23	8	80	65	77	62
43.	11-4	13	7	20	11	89	73
44.	15-1	28	17	94	71	71	49
45.	14-9	9	4	32	31	90	75

It can be noted from Table 4 that the highest score obtained on the word meaning section of the Stanford Achievement Test, Primary form was 28, and the lowest score was 2. The range of scores obtained for the special class group on the word meaning section of the Stanford Achievement Test (Elementary) was from 24 to 2. The highest score made by any subject in the special classes on the Basic Sight Vocabulary Test by Dolch, Part I was 112, and the lowest score made by any subject of this group was 0. On part 2 of the Basic Sight Vocabulary Test, the highest score obtained was 108, and the lowest score was 0. The largest number of words used in response to five pictures by subjects in this group was 175; the lowest number used was 24. The range in the number of different words used was from 88 to 21.

Table 5 gives the significance of differences in variation and mean mental ages and social ages between educable mentally retarded children in regular classes and special classes.

Table 5

Significance of differences in variation and mean mental ages and social ages between educable mentally retarded children in regular classes and special classes

Factor and Group	Variance	*F* ratio[1]	mean	difference	*t*[2]
A. Mental age					
Regular classes	247.9805	1.08	78.7551	3.0218	.62
Special classes	267.9273		75.7333		
B. Social Age					
Regular classes	677.7492	1.31	137.2041	1.1070	.13
Special classes	890.9010		138.3111		

---

1. df = 1,91

2. df = 92

Table 5 indicates that there are no significant differences between the two groups with regard to mental age, and social age. However, the mean score for both groups is higher for social age.

Table 6 states the mean scores (unadjusted) for regular and special classes on eight different measurements.

Table 6

Mean Scores (unadjusted) for Regular and Special Classes on Eight Different Measurements [1]

Measurement	Regular Class Mean (n = 49)	Special Class Mean (n = 45)
Mental Age	78.7551	75.7333
Social Age	137.2041	138.3111
Stanford Achievement Test (Primary)	16.7959	15.3556
Stanford Avhievement Test (Elementary)	13.7143	10.7111
Dolch Basic Sight Vocabulary (Part I)	31.4898	30.2070
Dolch Basic Sight Vocabulary (Part II)	29.2653	25.7333
Number of words	77.6939	71.9333
Number of different words	51.9184	48.2889

---

1. Significance of differences between groups is given in Tables 9 - 14.

Table 6 summarizes the means for the regular and special classes on the eight different measurements. The largest mean secured by each group was for social age. The regular class group had a mean of 137.2041 for social age, and the special class group had a mean of 138.3111. Out of the eight measurements used in this study, the second largest mean secured by each group was with respect to the number of words used. The regular class mean for the number of words used was 77.6939 and the special class mean for the number of words used was 71.9333.

Table 7 presents the relationships between mental age and word recognition, number of words and number of different words used.

Table 7

Relationships between Mental Age and Word Recognition, Number of Words and Number of Different Words Used

Measurement	Correlations with Mental Age Regular classes n = 49)	 Special classes (n = 45)
Stanford Achievement Test (Primary)	.2417	.1692
Stanford Achievement Test (Elementary)	.3514**	.1458
Dolch Basic Sight Vocabulary (Part I)	.2731*	.4740**
Dolch Basic Sight Vocabulary (Part II)	.2587	.3913**
Number of words	−.2047	.3495*
Number of different words	−.0013	.5415**

* $P \leqslant .05$
** $P \angle .01$

Table 7 indicates relationships between the different tests and mental age. It can be noted from Table 7 that A positive correlation coefficient of . 3514 was found between mental age and scores obtained on the Stanford Achievement Test, word meaning section, elementary form for subjects in the regular classes. The r obtained with this sample is positive and significant at the one per cent confidence level. We can infer from the r . 3514 obtained that there is a high positive relationship between mental age and scores obtained on the word meaning section, elementary form of the Stanford Achievement Test by subjects in the regular classes.

A positive correlation coefficient of .2731 was found between mental age and scores obtained on part 1 of Dolch's Basic Sight Vocabulary Test. The r obtained with this sample is positive and significant at the five per cent confidence level.

Table 7 further indicates that a positive r of . 4740 was found between scores obtained on part 1 of Dolch's Basic Sight Vocabulary and mental age for subjects in the special classes. This r was found to be significant at the one per cent confidence level. A positive r of . 3913 was found between scores obtained on Dolch's Basic Sight Vocabulary test, part 2 and mental age for subjects in the special classes. This r was found to be significant at the one per cent level of confidence.

It can be noted from table 7 that a positive r . 3495 was found between number of words and mental age for subjects in special classes. This r is significant at the five per cent confidence level. Table 7 likewise indicates that a negative r was found to exist between number of words and mental age for subjects in the regular classes. However, this negative correlation was not found to be statistically significant. The correlation between the number of different words and mental age for subjects in special classes yielded a positive r of . 5415. Prior to reaching the conclusion on the r obtained, the investigator tested the significance of r . R was found to be significant at the one per cent confidence level. We can infer from the r. 5415 that a positive relationship between the number of different words and mental age exists for subjects in the special classes.

Table 8 states relationships between social age and word recognition, number of words and number of different words used.

Table 8

Relationships between Social Age and Word Recognition, Number of Words and Number of Different Words Used

Measurement	Correlation with Social Age	
	Regular classes	Special classes
Stanford Achievement Test (Primary)	.1375	.1578
Stanford Avhievement Test (Elementary)	.3416*	.1029
Dolch Basic Sight Vocabulary (Part I)	.2811	.3116
Dolch Basic Sight Vocabulary (Part II)	.2832	.2925
Number of words	-.3029	.1673
Number of different words	-.1649	.1962

* $P < .05$

It can be seen from table 8 that a positive r .3417 was found for subjects in the regular classes, between the scores obtained on the word meaning section of the Stanford Achievement Test, elementary form and social age. This r .3417 was foun to be significant at the five per cent confidence level. When the number of words was correlated with social age for subjects in the regular classes, a negative correlation coefficient -.3209 was obtained. This r -.3209, although negative, is not satistically significant. A negative, non-significant r -.1649 was found between number of different words and social age for the same group.

Positive correlations coefficients were found between social age and word recognition, number of words and number of different words used for subjects in the special classes. These positive correlation coefficients obtained were not found to be statistically significant.

Table 9 presents the analysis of variance and co-variance of Stanford-Achievement Test (Primary) scores with both mental age and social age held constant for two groups of educable mentally retarded children in regular classes and special classes.

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Table 9

Analysis of Variance and Co-variance of Stanford-Achievement Test (Primary) Scores With Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	5752	23692	71731	3410	4636	26787	90	5247	58	
Between Groups	1	49	214	29	102	-37	-78	1	28	28	< 1
Total	93	5801	23906	71760	3512	4599	26709	91	5275		

It can be noted from table 9 that when the analysis of variance and co-variance were computed of the Stanford-Achievement Test (primary) scores with both mental age and social age held constant for educable mental retardates in regular classes and special classes an F ratio of less than one was obtained. The value of F at the 5 per cent level of confidence is 3.95, and 6.95 at the 1 per cent confidence level. The F ratio obtained was less than one, and is therefore not statistically significant. Hence, the null hypothesis that there is no difference between educable mental retardates in regular classes and special classes when mental age and social age are held constant and correlated with recognition vocabulary, as determined by scores obtained on the Stanford-Achievement Test (primary), was accepted.

Table 10 summarizes the analysis of variance and co-variance of Stanford-Achievement Test (elementary) scores with both mental age and social age held constant for both groups.

Table 10

Analysis of Variance and Co-variance of Stanford-Achievement Test (Elementary) Scores With Both Mental Age and Social Age Held Constant for Two Groups Educable Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	4123	23692	71731	3125	4657	26787	90	3681	41	
Between Groups	1	212	214	29	213	-79	-78	1	170	170	4.15*
Total	93	4335	23906	71760	3338	4578	26709	91	3851		

* $P < .05$

It can be seen from the data in table 10 that the F ratio obtained when mental age and social age were held constant and computed with scores obtained on the Stanford-Achievement Test (elementary) for both groups, was 4.15. The value of F at the 5 per cent confidence level is 3.95,and 6.93 at the 1 per cent confidence level. The obtained F of 4.15, is therefore significant at the 5 per cent confidence level. Hence, the null hypothesis was rejected. We can infer from the F ratio 4.15 that there is a difference between the two groups' scores on the Stanford-Achievement test (elementary) when both mental age and social age are held constant.

Table 11 presents the analysis of variance and co-variance of Dolch Basic Sight Vocabulary Test (Part I) with both mentally retarded groups.

Table 11

Analysis of Variance and Co-variance of Dolch Basic Sight Vocabulary (Part I) With Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	109760	23692	71731	18943	26208	26787	90	94061	1045	
Between Groups	1	39	214	29	92	-33	-78	1	6	6	< 1
Total	93	109799	23906	71760	19035	26175	26709	91	94067		

Table 11

Analysis of Variance and Co-variance of Dolch Basic Sight Vocabulary (Part I) With Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	109760	23692	71731	18943	26208	26787	90	94061	1045	
Between Groups	1	39	214	29	92	-33	-78	1	6	6	< 1
Total	93	109799	23906	71760	19035	26175	26709	91	94067		

It can be seen from Table 11 that when the analysis of variance and co-variance were computed of the Dolch Basic Sight Vocabulary Test (part 1) with both mental age and social age held constant for educable mental retardates in both groups in this study a F ratio of less than one was obtained, and is therefore not statistically significant. Hence, the null hypothesis that there is no difference between educable mental retardates in regular classes and special classes when mental age and social age are held constant and correlated with recognition vocabulary as determined by scores obtained on the Dolch Basic Sight Vocabulary (Part I), was accepted.

Table 12 presents data on the analysis of variance and co-variance of Dolch Basic Sight Vocabulary (Part II),with both mental age and social age held constant for two groups of educable mentally retarded children enrolled in regular classes and special classes.

Table 12

Analysis of Variance and Co-variance of Dolch Basic Sight Vocabulary (Part II) With Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	94460	23692	71731	15697	24212	26787	90	83051	923	
Between Groups	1	293	214	29	250	- 92	- 78	1	116	116	< 1
Total	93	94753	23906	71760	15947	24120	26709	92	83167		

It can be seen from Table 12 that when the analysis of variance and co-variance were computed of the Dolch Basic Sight Vocabulary Test (Part II) with both mental age and social age held constant for educable mental retardates in both groups an F ratio of less than one was obtained, and is therefore not statistically significant. Hence, the null hypothesis that there is no difference between the two groups when mental age and social age are held constant and correlated with recognition vocabulary as determined by scores obtained on Dolch Basic Sight Vocabulary (Part II), was accepted.

Another problem in this investigation was to determine if a difference existed between the two groups with mental and social age held constant and correlated with functional vocabulary as determined by the number of words spoken in response to five structured peaking stimuli. Table 13 presents the analysis of variance and co-variance of number of words with both mental age and social age held constant for two groups of educable mentally retarded children enrolled in regular classes and special classes.

Table 13

Analysis of Variance and Co-variance of Number of Words With Both Mental Age and Social Age Held Constant for Two Groups of Educable Mentally Retarded Children: Regular Classes and Special Clases

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within groups	92	71603	23692	71731	2661	-5004	26787	90	70018	778	
Between groups	1	779	214	29	408	-150	-78	1	213	213	< 1
Total	93	72382	23906	71760	3069	-5154	26709	91	70231		

Table 14

Analysis of Variance and Co-variance of Number of Different Words
With Both Mental Age and Social Age Held Constant for Two Groups of Educable
Mentally Retarded Children: Regular Classes and Special Classes

Source of Variation	df	Sum of Squares						Adjusted Analysis			
		Σy^2	Σx^2	Σz^2	Σyx	Σyz	Σxz	df	s. s.	m. s.	F
Within Groups	92	39695	23692	71731	6063	-47	26787	90	36994	411	< 1
Between Groups	1	309	214	29	257	-95	-78	1	102	102	
Total	93	40004	23906	71760	6320	-142	26709	91	37096		

It can be seen from Table 13 that when the analysis of variance and co-variance were computed of the number of words used by subjects in both groups with mental age and social age controlled, an F ratio of less than one was found. This F ratio was not statistically significant, and we can infer that there is no difference between the two groups when mental age and social age are held constant and correlated with functional vocabulary as determined by the number of words used in response to five pictures.

Table 14 presents data on the analysis of variance and co-variance of the number of different words with mental age and social age held constant for both groups.

It can be seen from Table 14 that when the analysis of variance and co-variance were computed of the number of different words used by subjects in both groups with mental age and social age held constant an F ratio of less than one was found, and was not statistically significant. We can infer that there is no difference between the two groups when mental age and social age are held constant and correlated with functional vocabulary as determined by the number of different words used in response to five structured speaking stimuli.

Table 15. Number of Words Used by Subjects in Regular Classes, According to Parts of Speech

	Nouns	Adjectives	Verbs	Adverbs	Pronouns	Conj.	Prep.	Inter.
1.	73	5	5		5	5	2	
2.	70	4	4		3	10	3	
3.	10	0					1	
4.	70	2	7	1	1	6	2	
5.	60	11	5		8	7	2	
6.	62	2	10	1	5	8	4	
7.	53	5	1	5		4	2	
8.	30	2				6		
9.	77	5	1	4	8	4		
10.	69	4				5	3	
11.	61	8		1	2	9		
12.	42	5				6	2	
13.	65	4	10	1	4	14	2	
14.	37	5	1				2	
15.	67	6					3	
16.	63	7	2		5	4	2	
17.	86	3	5	2	4	6	1	
18.	70	6	3		7	4	2	
19.	64	3				13		
20.	31	0				5		
21.	51	5				9	3	
22.	44	4					1	
23.	65	5				3		

	Nouns	Adj.	Verbs	Adverbs	Pronouns	Conj.	Prep.	Inter.
24.	38	3				11	2	
25.	67	13	5	2	3	10		
26.	30					7		
27.	117	15	12		12	13	8	
28.	85	2	5		8	3	5	
29.	88		2			4	2	
30.	21					2	2	
31.	68					4		
32.	65					4		
33.	60					2		
34.	90		2		9	4	1	
35.	65					3		
36.	89	2			4	2	2	
37.	40					1		
38.	47		2			2	1	
39.	26		5			2		
40.	80		2		10	11		
41.	84				3	4	1	
42.	42	13				10		
43.	82		3		2	2	1	
44.	43					1		
45.	90	2	5		11	11		
46.	85	1	1		10	9		
47.	90		3		7	7		
48.	80	1				2		
49.	82		1		2	7		
To-tals	3074	153	102	17	133	266	62	0

According to Table 15, the subjects enrolled in the regular classes used more nouns and conjunctions and fewer prepositions and adverbs than any other parts of speech. It should be especially noted that these subjects did not use any interjections.

Number of words used by the subjects enrolled in the special classes, according to parts of speech, are presented in Table 16.

Table 16. Number of Words Used by Subjects in Special Classes, According to Parts of Speech

	Nouns	Adj.	Verbs	Adv.	Pronoun	Conj.	Prep.	Interj.
1.	54	5	5		4	9	2	
2.	68	3	5		6	13	1	
3.	54		2		6	6		
4.	45		5			2		
5.	46	5	3			5		
6.	85	3	3		2	6	3	
7.	70	3	3			7		
8.	20					7		
9.	73	1	1		6	7	1	
10.	50	2	2			8		
11.	81	5	5		7	1	2	
12.	60	22			20	5	8	
13.	26	2	2			2	4	
14.	39	3	3			8	1	
15.	42	2				4	6	
16.	38	2				10	6	
17.	16					8		
18.	92	4		1		3		
19.	52	4		2		6		
20.	90	2			3	8		
21.	90	5				3		
22.	72	4	4		7	4		
23.	70	3				5		
24.	43	6				10		

	Noun	Adj.	Verbs	Adv.	Pronoun	Conj.	Prep.	Interj.
25.	26					8		
26.	80		12		17	6		
27.	35	1	5			5		
28.	54	1				4		
29.	48	2				7		
30.	22					9		
31.	90					7		
32.	23	1				3	1	
33.	73	2	2		2	8		
34.	81	3	1	1	14	2		
35.	34	2				11		
36.	79	2	2			14		
37.	64	1	5			11		
38.	47	2				6		
39.	82	5	3		4	5		
40.	56	2			2	8		
41.	45	3				9		
42.	40	10	6	4	9	8		
43.	80		2			7		
44.	62					9		
45.	72	5	1			12		
Total	2569	128	82	8	109	306	35	0

It can be seen from Table 16 that the subjects in the special classes used more nouns and conjunctions and fewer prepositions and adverbs than any other parts of speech. It should be noted that these subjects did not use any interjections.

Figure 1 presents the arithmetic means of each group for parts of speech.

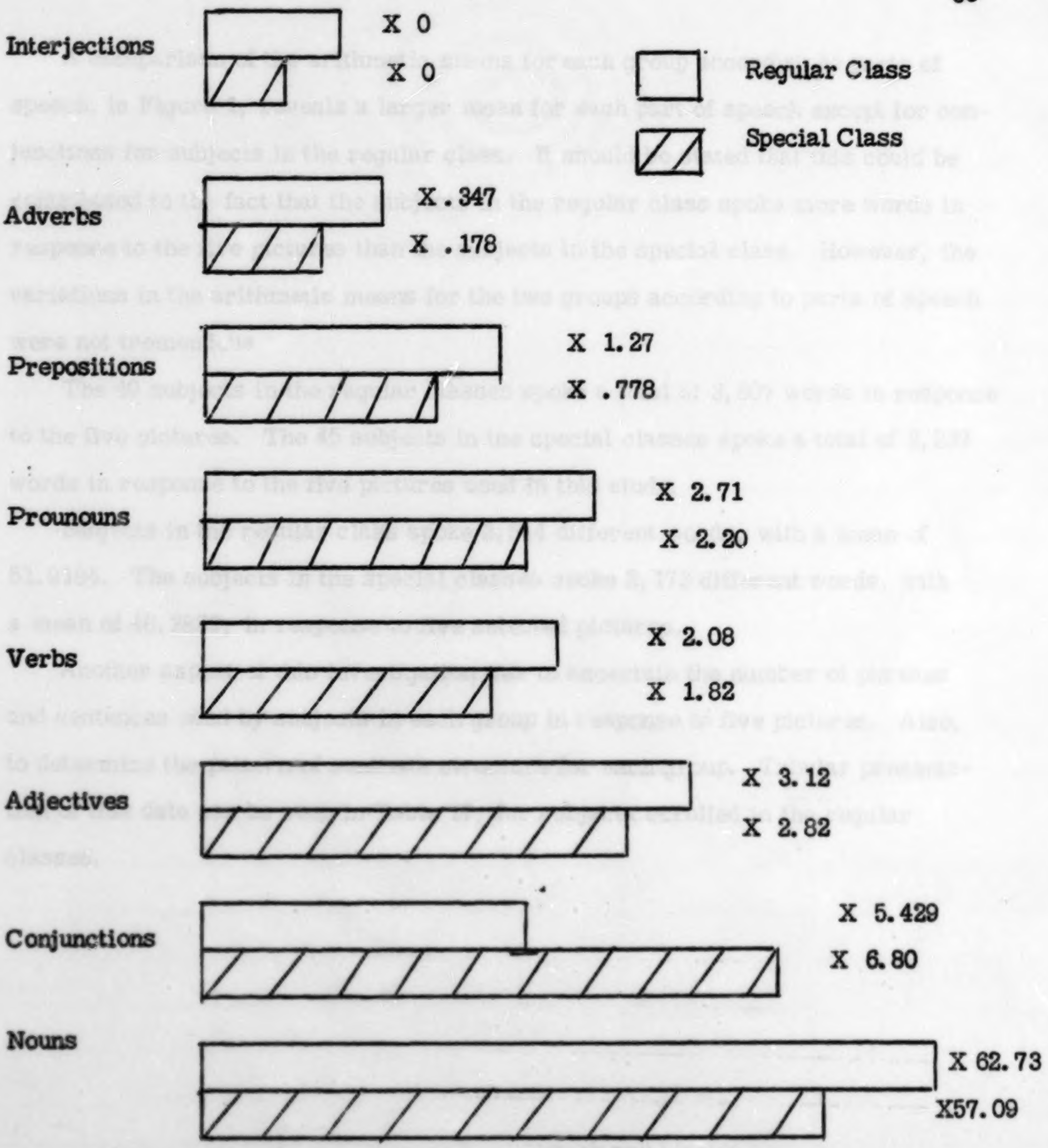

Figure 1. Comparison of the arithmetic means for both groups, according to parts of speech.

A comparison of the arithmetic means for each group according to parts of speech, in Figure 1, reveals a larger mean for each part of speech except for conjunctions for subjects in the regular class. It should be stated that this could be contributed to the fact that the subjects in the regular class spoke more words in response to the five pictures than the subjects in the special class. However, the variations in the arithmetic means for the two groups according to parts of speech were not tremendous.

The 49 subjects in the regular classes spoke a total of 3,807 words in response to the five pictures. The 45 subjects in the special classes spoke a total of 3,237 words in response to the five pictures used in this study.

Subjects in the regular class spoke 2,544 different words, with a mean of 51.9184. The subjects in the special classes spoke 2,173 different words, with a mean of 48.2889, in response to five selected pictures.

Another aspect of this investigation was to ascertain the number of phrases and sentences used by subjects in each group in response to five pictures. Also, to determine the pattern of sentence structure for each group. Tabular presentation of this data can be seen in Table 17, for subjects enrolled in the regular classes.

Table 17. Grammatical Construction of Speech Responses for Subjects Enrolled in Regular Classes

Subjects	No. of Clauses	No. of Phrases	No. of Sentences	No. of Inversion of Sentences	Pattern of Sentences				
					p	b	l	f	lg
1		2	5		2			3	2s 3a
2		3	4					4	4s
3		1							
4		2	7		5			2	3s 4a
5		2	5		5				5a
6		4	10		4			6	7s 3a
7		2	1		1				1s
8									
9			1		1				1s
10		3							
11									
12		2							
13		2	10		4			6	8s 2a
14		2	1					1	1s
15		3							
16		2	2		1			1	2s
17		1	5		2			3	3s 2a
18		2	3		3				2s 1a
19									
20									
21		3							
22		1							
23									

Subject	No. of Clauses	No. of Phrases	No of Sentences	No. of Inversion of Sentences	Pattern of Sentences p	b	l	f	lg
24		2							
25			5		4			1	2s 3a
26									
27		8	12		9			3	10s 2a
28		5	5		4			1	4s 1a
29		2	2		2				2a
30		2							
31									
32									
33		1							
34			2		2				2a
35									
36		2							
37									
38		1	2					2	2s
39			5		4			1	2s 3a
40		2	2		2				2a
41									
42		1							
43		1	3		3				3s
44		1							
45			5		2			3	3s 2a

Subject	No. of Clauses	No. of Phrases	No of Sentences	No. of Inversion of Sentences	Pattern of Sentences				
					p	b	l	f	lg
46			1		1				1a
47			3		2			1	1s 2a
48									
49			1					1	1s
Total	0	65	102	0	63			39	62s 40a

Pattern of Sentence Structure Code:

p - periodic

b - balance

l - loose

f - fragmentary

lg - length

s - short sentence

a - long sentence

According to the grammatical construction in Table 17, subjects enrolled in the regular classes spoke 102 sentences, 65 phrases, no clauses and inversion of sentences. Sixty-three of the sentences spoken by these subjects were periodic and 39 were fragmentary sentences. Further breakdown of the sentences according to length revealed that 62 sentences were short ones and 40 sentences were average length.

Table 18 presents tabular data on grammatical construction for subjects enrolled in the special classes.

Table 18. Grammatical Construction of Speech Responses for Subjects Enrolled in Special Classes

Subject	No of Clauses	No. of Phrases	No. of Sentences	No of Inversion of Sentences	Pattern of Sentences				
					p	b	l	f	lg
1		2	5		2			3	4s 1a
2		1	5		4			1	3s 2a
3			2		2				2a
4			5		5				3s 2a
5			3		3				3a
6		3	3		1			2	3s
7			3					3	2s 1a
8									
9		1	1		1				1a
10			2		2				2s
11		2	5		3			2	3s 2a
12									
13		4	2		1			1	2a
14		1	3		3				3s
15		6							
16		6							
17									
18									
19									
20		2							
21									
22			4		3			1	4s
23									
24									
25									

Subject	No. of Clauses	No. of Phrases	No. of Sentences	No. of Inversion of Sentences	Pattern of Sentences p	b	l	f	lg
26			12		8			4	9s 3a
27			5		5				4s 1a
28									
29		2							
30									
31									
32									
33		1							
34			1		1				1s
35									
36			2		2				2s
37			5		3			2	4s 1a
38									
39			3					3	3s
40									
41									
42			6		4			2	1s 5a
43			2					2	2a
44									
45			1		1				1a
Total	0	31	80	0	54			26	51s 29a

According to the grammatical construction, presented in Table 18, subjects enrolled in the special classes spoke 80 sentences, 31 phrases, no clauses and no inversion of sentences. Fifty-four of these sentences were periodic and 26 were fragmentary sentences. Additional breakdown of speech responses for this group showed that the subjects in the special classes spoke 51 short sentences and 29 average length sentences.

Figure 2 presents the arithmetic means for each group according to grammatical constructions.

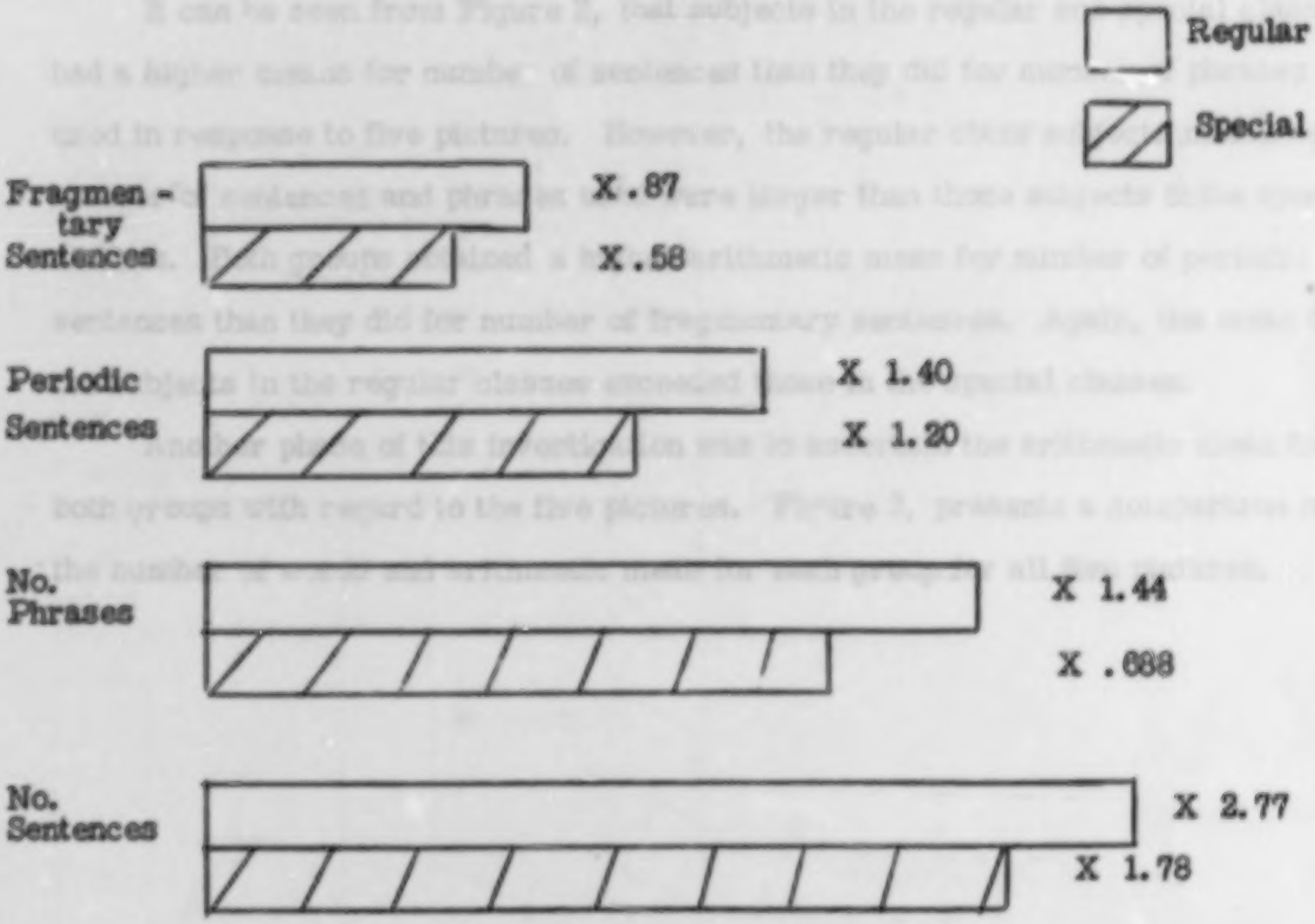

Figure 2. Comparison of the arithmetic means for both groups, according to grammatical constructions.

It can be seen from Figure 2, that subjects in the regular and special classes had a higher means for number of sentences than they did for number of phrases used in response to five pictures. However, the regular class subjects means for number of sentences and phrases used were larger than those subjects in the special classes. Both groups obtained a higher arithmetic mean for number of periodic sentences than they did for number of fragmentary sentences. Again, the mean for the subjects in the regular classes exceeded those in the special classes.

Another phase of this investigation was to ascertain the arithmetic mean for both groups with regard to the five pictures. Figure 3, presents a comparison of the number of words and arithmetic mean for each group for all five pictures.

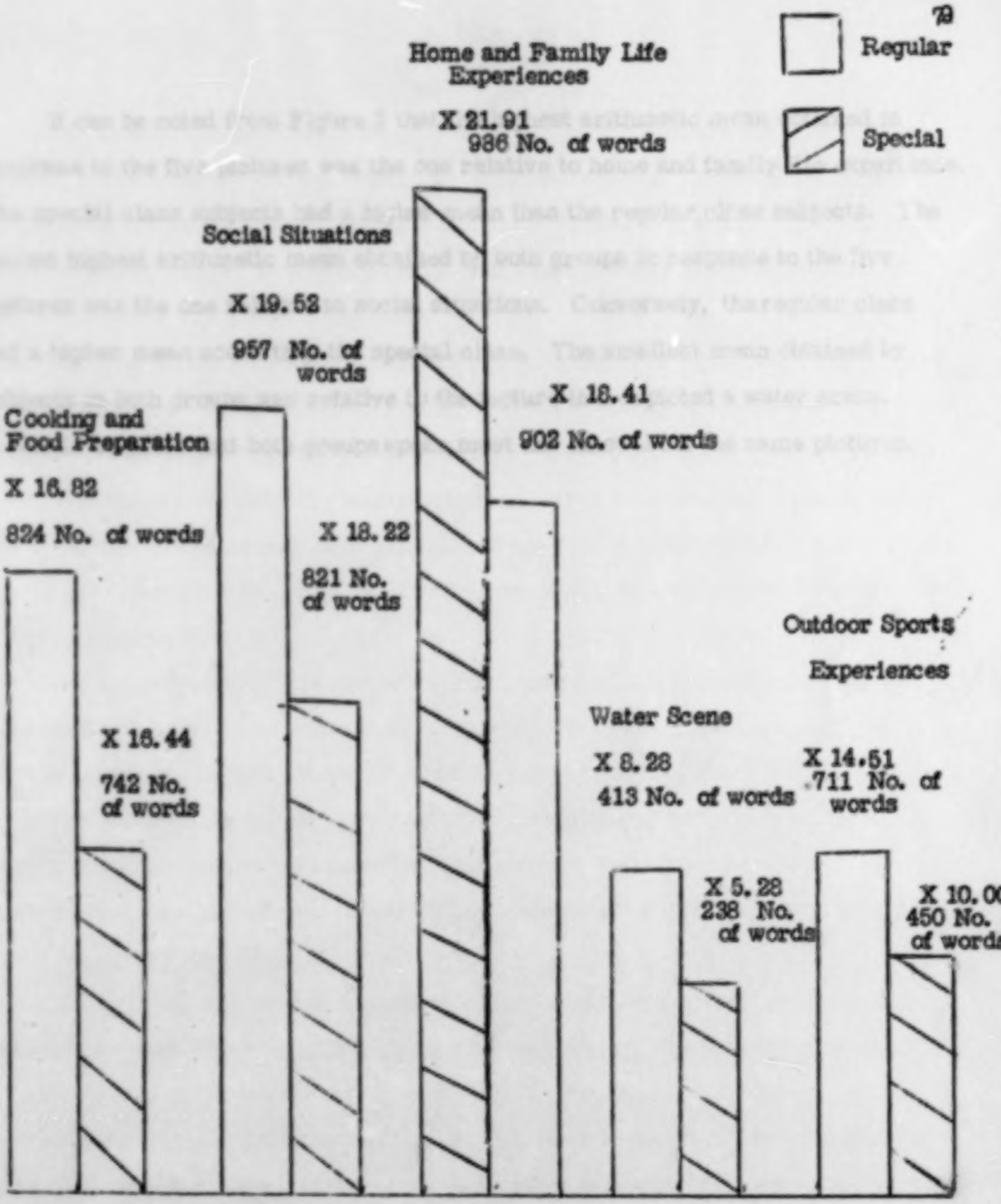

Figure 3. Comparison of the arithmetic means for both groups, according to five pictures.

It can be noted from Figure 3 that the highest arithmetic mean obtained in response to the five pictures was the one relative to home and family life experience. The special class subjects had a higher mean than the regular class subjects. The second highest arithmetic mean obtained by both groups in response to the five pictures was the one relative to social situations. Conversely, the regular class had a higher mean score than the special class. The smallest mean obtained by subjects in both groups was relative to the picture that depicted a water scene. It should be noted that both groups spoke most and least about the same pictures.

CHAPTER V

SUMMARY

The problem in this investigation was to compare the number of words, the number of different words, the classification of these words according to parts of speech, and the social ages of a selected group of educable mentally retarded children in regular classes in public schools with those of a similar group in special classes in public schools of Louisiana.

For this investigation two groups of educable mentally retarded children were chosen, one from regular classes in public schools in Louisiana, and the other from special classes in public schools in Louisiana. The regular class group consisted of 49 subjects and the special class group consisted of 45 subjects. The chronological age range of all subjects was generally from 7 to 14 years of age. The range in intelligence quotient was generally 50 to 75, according to the Stanford Binet Scale, Form L, results.

The investigator and the tester for this research project, administered the Stanford Binet Intelligence Scale to all subjects in the regular classes and special classes during the second semester of the school year 1958-1959.

The Vineland Social Maturity Scale was administered to determine the social quotient for each subject. Teachers of each subject served as informants. A scoring sheet was mimeographed and given to each teacher along with the Vineland Social Maturity Scale.

The primary and elementary forms of the word meaning section of the Stanford Achievement Tests were administered to each subject by four persons engaged in this project. Tests were read to each subject separately. Both forms, of the Stanford Achievement Tests, were given to ascertain the recognition vocabulary of subjects used in this study. With these tests, each subject's vocabulary was tested with respect to the words that he could recognize the correct meaning when he heard it.

Parts 1 and 2 of the Dolch Basic Sight Vocabulary were also administered by four testers. Each subject was given this test separately. Each subject was asked to point to each word he recognized and he was also asked to say the word aloud. The results of parts 1 and 2 of the Dolch Basic Sight Vocabulary Test were also used to ascertain the recognition vocabulary of subjects in this study. With this vocabulary test, each subject was tested with respect to his ability to recognize a word when he sees it.

In order to secure an estimate of the functional vocabulary (number of words and number of different words of each subject), speech responses were elicited to five selected pictures. These pictures concerned (1) a water scene, (2) a social situation common to most children, (3) home and family life situation, (4) cooking and food preparation, and (5) outdoor sports activity.

The speech analyst, for this investigation, presented each subject with one picture at a time, prefacing the presentation with the following instructions: "I am going to show you some pictures, and I want you to tell me a story about each picture." In a few cases, where subjects failed to respond, the speech analyst asked them, "What is this picture about?" In some instances it was necessary to ask the subject to "tell me what you see on this picture." As the subject responded, his speech was tape recorded.

Correlation coefficients were computed to determine the relationship between mental age and recognition vocabulary and functional vocabulary for each group; and between social age and age and recognition vocabulary and functional vocabulary for each group.

The following results were obtained at the five per cent level of confidence:

1. A positive significant relationship was obtained between mental age and recognition vocabulary as determined by scores on Dolch Basic Sight Vocabulary, Part I for educable mental retardates enrolled in regular classes.

2. A positive significant relationship was obtained between mental age and functional vocabulary as determined by number of words in response to five pictures, by subjects enrolled in special classes.

3. A positive significant relationship was obtained between social age and recognition vocabulary as determined by scores on Stanford Achievement Test (Elementary) for subjects enrolled in regular classes.

The following results were obtained the one per cent level of confidence:

1. A positive significant relationship was obtained between mental age and recognition vocabulary as determined by Stanford Achievement Test (Elementary) for subjects enrolled in regular classes.

2. A positive significant relationship was obtained between mental age and recognition vocabulary as determined by Dolch Basic Sight Vocabulary Tests, Parts 1 and 2 by subjects enrolled in special classes.

3. A positive significant relationship was obtained between mental age and functional vocabulary as determined by number of different words used in response to five pictures, by subjects enrolled in special classes.

No significant difference was found between mental age and social age of educable mental retardates in regualr classes and those in special classes.

In testing the significance of difference between the two groups of educable mental retardates, the analysis of co-variance was used. Two factors were controlled; mental age and social age.

The following null hypotheses tested were accepted:

1. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Stanford Avhievement (Word Meaning Section) Primary Test.

2. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Dolch Basic Sight Vocabulary Test (Part I).
3. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Dolch Basic Sight Vocabulary Test (Part II).
4. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the number of words used.
5. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the number of different words used.

The following null hypothesis was rejected at the 5 per cent level of confidence:

1. Holding constant the factors of mental age and social age, there is no difference between the two groups of mentally retarded children with respect to word recognition as measured by the Stanford Achievement-Elementary Test.

When speech responses were classified according to parts of speech, results revealed that the subjects in the regular classes and special classes used more nouns and conjunctions, fewer prepositions and adverbs, and no interjections. A comparison of the arithmetic means of the two groups according to parts of speech, indicates that the subjects in the regular classes had a higher mean than subjects in the special classes with respect to nouns, adjectives, pronouns, prepositions and adverbs.

Conversely, the subjects in the special classes had a higher arithmetic mean than subjects in the regular classes with respect to conjunctions.

Additional breakdown of speech responses according to grammatical constructions revealed that the subjects in the regular classes had a higher arithmetic mean than subjects in the special classes with respect to number of sentences and phrases used. Both groups used more periodic sentences than fragmentary sentences, and both groups spoke more short sentences than average length sentences. No group used either balance or loose sentences, clauses, long sentences or inverted sentences.

Results from the tabulations of the total number of words used by subjects in the regular classes and those in special classes revealed that subjects in the regular classes, as did those in the special classes, spoke most about the picture concerning home and family life situation and least about the picture which dealt with a water scene. When comparisons were made of the arithmetic means of both groups, it was discovered that both groups spoke more words in response to the five pictures in the same order: (1) home and family life experience, (2) social situation, (3) cooking and food preparations, (4) outdoor sports experiences, and (5) a water scene.

Findings from this study seem to indicate that when mental age and social age are held constant from educable mental retardates in regular classes and special classes no differences will exist between functional vocabulary and recognition vocabulary for the two groups. However, one exception was noticed and that was with respect to recognition vocabulary as determined by scores obtained on the Stanford Achievement (Elementary Form) Test when mental age and social age were held constant. Although no differences existed for the most part between the two groups of statistical importance, some variations existed between the mean scores obtained by these two groups. The regular class subjects had a mean score of 77.6939 for number of words used in response to five pictures, and the special class subjects had a mean score of 71.9333 for numbers of words used in response to five pictures. Special class subjects had a mean score of 48.2889, and the regular class subjects had a mean score of 51.9184 for the number of different words used in response to five pictures.

It should be noted that when ~~meantal~~ MENTAL age was correlated with number of words and number of different words a negative correlation was found to exist for subjects in the regular class, but the correlation was not statistically significant. When mental age was correlated with number of words and number of different words for subjects in the special classes a significant correlation, which was positive, was found at the five per cent confidence level and one per cent level respectively.

Below are recommendations for additional research in this area:

1. Additional experimental studies are needed to determine the relationship between educable mental retardates in regular and special classes with respect to social development and speaking vocabulary.

2. A comparative longitudinal study should be made of mental retardates with respect to social development and verbal output in a regular class, a special class, and a private day school.

3. A comparative study of verbal output and social development should be made of familial educable mental retardates and non-familial educable mental retardates.

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APPENDICES

Record Booklet - Form L of Stanford-Binet Scale

Vineland Social Maturity Scale

Actual Scoring Sheet for Vineland Social Maturity Scale

Letter of Permission to Test to Principals

Stanford Achievement Test (Primary Form - Word Meaning)

Stanford Achievement Test (Elementary Form - Word Meaning)

Dolch Basic Sight Word Test (Parts I and II)

Thank You Letters to Principals

Pictures of Testing Situations

Photos of Pictures Used to Elicit Speech Response